

Gonococcal pharyngeal infections

Report of 110 cases

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Routine examination for gonorrhoea has hitherto been aimed at the demonstration of *Neisseria gonorrhoeae* in secretions from the urethra, cervix, and rectum. Bacteriological investigation has been limited to the genital organs directly implicated in sexual intercourse, to adjacent sites often involved in gonococcal infection, and the rectum in homosexual men.

It has been almost completely disregarded that other sexual activities are often practised concurrently with genital coitus, and also that the techniques used by homosexuals are by no means confined to peno-rectal contact. In this connection, special attention should be paid to cunnilingus and fellatio, as gonococci may be transferred thereby from the genitalia to the mouth.

That oro-genital practices are in common use is clear from the reports of Kinsey and others (1948, 1953), who stated that nearly 60 per cent. of all American men had had such contact, while women seemed somewhat less interested.

However, little attention has hitherto been paid to gonococcal oro-pharyngeal infections. Until recent years only a few communications on this subject have been presented, in which the diagnosis of *Neisseria gonorrhoeae* has been unequivocally established. Thus single cases of pharyngitis (Fiumara, Wise and Many, 1967; Metzger, 1970), ulceration of the tongue (Cowan, 1969), and asymptomatic pharyngeal infection (Thatcher, McCraney, Kellogg, and Whaley, 1969) have been reported. Gonococci were demonstrated in specimens from the tonsils of two out of fifty patients admitting oro-genital contact during their latest intercourse (Hellgren, 1971).

The starting point for our investigation was a male patient who attended in April, 1970, a few days after having practised cunnilingus, but not

genital coitus. He requested an examination for VD, although he had no symptoms, and a culture from the tonsils revealed *Neisseria gonorrhoeae*.

As we thought gonococci might often be transferred to the mouth by oro-genital contact, we now decided to do routine cultures for gonococci from the pharynx in all patients attending for suspected VD.

It soon became obvious that gonococcal pharyngeal infection was not an exceptional finding (Bro-Jørgensen and Jensen 1971a, b; 1972).

Gonococcal pharyngitis in homosexual men has been reported by Owen and Hill (1972), Ratnatunga (1972) and Rodin, Monteiro, and Scrimgeour (1972); a report of 150 cases of pharyngeal gonococcal infections in both homo- and heterosexuals has been presented by Wiesner, Tronca, Bonin, Pedersen, and Holmes (1973).

The following paper gives an account of our continued and extended study of pharyngeal gonococcal infections. A supplementary study concerning the frequency of oro-genital practices in heterosexual men and women has been made, as we could find no recent relevant investigations of this subject.

Patients and methods

The series comprised 804 men and 542 women suffering from gonorrhoea and a similar number of patients not suffering from this disease. The patients were seen in private dermato-venereological practice (1970-1972), in a municipal VD Clinic in Copenhagen (1971-1972), and in the University Department of Dermatology and Venereology of the Rigshospital, Copenhagen (1972).

The initial diagnosis of gonorrhoea was based upon the demonstration of intracellular diplococci in a methylene blue stained smear from the urethra and cervix of women, from the urethra of men, and in some cases from the rectum of homosexual men.

The final diagnosis was in all cases confirmed by culture. Swabs were taken for culture from the urethra, cervix, and rectum of women, from the urethra of men, and also from the rectum of homosexual men.

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Gonococci in the pharynx were diagnosed by culture only.

The swabs were placed in Stuart's medium, and sent without delay to the Neisseria Department of the State Serum Institute of Copenhagen. All swabs were cultured on Thayer-Martin selective medium. The pharyngeal swabs were also cultured on an unselective medium.

The immunofluorescent method was used to identify gonococci in cultures from the urethra, cervix and rectum, and sugar fermentation tests were used to distinguish *Neisseria gonorrhoeae* from other *Neisseria* harboured in the pharynx.

In taking pharyngeal specimens the usual charcoal swabs were used, wetting the swabs with saliva being avoided as far as possible. The swabs were rubbed against the surface of the tonsils, inserted into the crypts and the spaces between the palatine arches and the tonsils, and finally rubbed over the posterior pharynx.

Sensitivity determination of all gonococcal strains to penicillin G, tetracycline, and streptomycin was carried out using the plate-dilution method (Reyn, Bentzon, and Ericsson, 1963). The sensitivity to penicillin was expressed as the 50 per cent. inhibitory concentration of penicillin G in $\mu\text{g./ml.}$ (IC_{50}). For penicillin the strains were divided into two groups denoted fully sensitive ($\text{IC}_{50} \leq 0.038 \mu\text{g./ml.}$), and less sensitive ($\text{IC}_{50} \geq 0.053 \mu\text{g./ml.}$).

A blood sample was taken from most patients at the first visit and sent to the Neisseria Department of the State Serum Institute, where the gonococcal complement-fixation test (GCFT) was performed according to the method described by Reyn (1965). In patients with pharyngeal gonococcal infections the test was repeated during the follow-up period.

Gonococcal genital infections were followed up by taking cultures from all sites repeatedly after treatment, in women three times and in men twice at weekly intervals. In patients with pharyngeal infections three to four negative cultures were regarded as necessary.

INTERVIEWS CONCERNING ORO-GENITAL PRACTICES

To determine the incidence of oro-genital practices among our patients, to elucidate the pathogenesis of pharyngeal gonorrhoea, and to assess the risk of acquiring pharyngeal infections by oro-genital contact, we interviewed a consecutive series of Danish patients. They were asked whether they had had oro-genital contact

with the supposed source of infection. If this was denied, they were asked whether they had practised it on other occasions, often, or fairly often, seldom, or never.

The patients were questioned by us personally in a frank and direct way. We had no difficulty in obtaining their cooperation.

Results

Incidence of gonococcal pharyngeal infections

The presence of *N. gonorrhoeae* was demonstrated in the pharynx of 110 patients: 55 women, 43 heterosexual and 12 homosexual men.

In Table I the incidence of pharyngeal gonococcal infections in patients suffering from gonorrhoea is related to sex and nationality, homosexual men forming a separate group.

Gonococcal pharyngeal infections occurred in 10 per cent. of the women, 7 per cent. of the heterosexual Danish men, and 25 per cent. of the homosexual men. In heterosexual foreign male patients the incidence was only 2 per cent.

N. gonorrhoeae was found in the pharynx of sixteen patients without evidence of gonorrhoea in other sites (indicated by the figures in brackets).

Age distribution

This did not differ noticeably from that in patients with gonorrhoea at other sites (Figs 1 and 2).

As homosexuals constituted only a relatively small part (6 per cent.) of the total number of male patients with gonorrhoea, they are not indicated separately in Fig. 2. There was a preponderance of homosexuals in the group aged 40 years or more.

Sensitivity to penicillin

That of the gonococcal strains isolated from the pharynx did not differ appreciably from that of the current strains isolated from the genitalia (Fig. 3).

Generally, the sensitivity of the pharyngeal strain agreed with that of the strain isolated from the urethra, cervix, or rectum in the same patient; *i.e.* the IC_{50} varied no more than three-fold (Reyn, Bentzon, and Ericsson, 1963). However, in five

TABLE I *Occurrence of Neisseria gonorrhoeae in pharynx of patients with gonorrhoea, by sex*

Sex	Race	Patients with gonorrhoeae	N. gonorrhoeae demonstrated in pharynx	Incidence of pharyngeal gonococcal infection (per cent.)
Female	Danish	542	55 (8)	10
Male	Heterosexual	Danish	39 (6)	7
		Foreign	4	2
	Homosexual	Danish and foreign	48	12 (2)
				25

Numbers in brackets: *Neisseria gonorrhoeae* demonstrated only in pharynx, cultures from urethra, cervix, and rectum being negative.

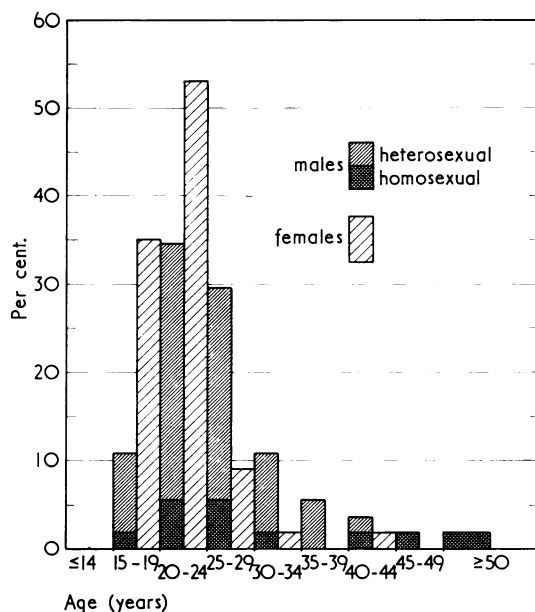


FIG. 1 Age distribution of 110 patients with pharyngeal gonococcal infections (55 females and 55 males (43 heterosexual and 12 homosexual))

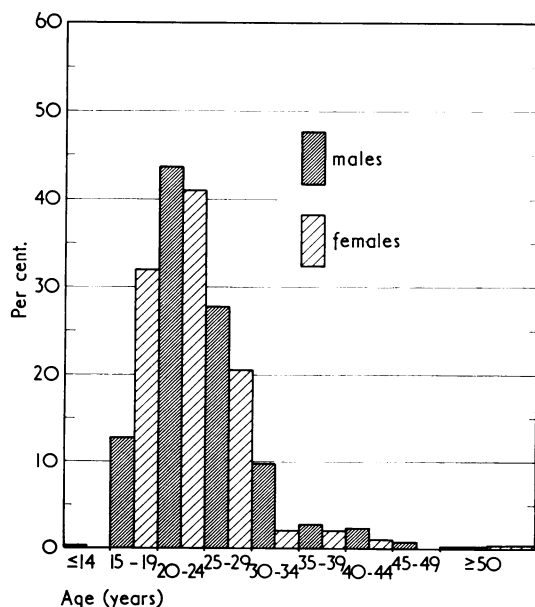


FIG. 2 Age distribution of 470 patients with uro-genital and/or rectal gonorrhoea (170 females and 300 males)

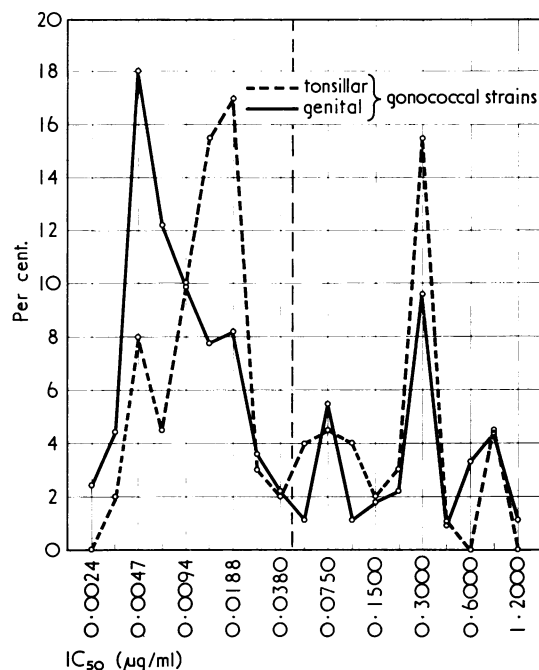


FIG. 3 Sensitivity to penicillin G of *Neisseria gonorrhoeae* isolated from the pharynx (109 strains) and the urethra, cervix, and rectum (550 strains)

patients, the penicillin sensitivity of the pharyngeal and genital strains varied from 6- to 22-fold, indicating either that the pharyngeal and genital infection were not acquired on the same occasion, or that the infection was caused by more than one strain ('mixed infection').

Incidence of oro-genital practices

A consecutive series of 1,203 heterosexual Danish patients (523 women and 680 men) were questioned about orogenital practices.

Table II (overleaf) shows that the pattern of sexual behaviour in this respect was the same in women and men, and was identical in patients suffering and not suffering from gonorrhoea.

About 20 per cent. claimed never to have engaged in oro-genital contact, while about 75 per cent. did so frequently or fairly frequently, about 35 per cent. at their most recent intercourse. It was often stated that oro-genital techniques were used with regular partners, but not with casual acquaintances.

In homosexual men peno-oral contact is believed to be almost the rule and this is reflected in the very high incidence of pharyngeal gonorrhoea in this group.

TABLE II *Oro-genital practice in 1,203 heterosexual Danish patients attending VD clinics, by sex*

Sex		Female						Male					
Gonorrhoea		Present		Absent		Total		Present		Absent		Total	
						No.	Per cent.					No.	Per cent.
Oro-genital contact	Often or fairly often	208	(96)	183	(97)	391 (193)	75 (37)	255	(120)	281	(136)	536 (256)	79 (38)
	Seldom	12		13		25	5	12		12		24	3
	Never	65		42		107	20	58		62		120	18
Total		285		238		523	100	325		355		680	100

gonococcal infection by exposing themselves in this way. In the patients who denied oro-genital contact with the alleged source of infection, *N. gonorrhoeae* was demonstrated in the pharynx in 3 per cent.

Isolated occurrence of pharyngeal gonorrhoea

In sixteen cases pharyngeal gonorrhoea was found in patients not suffering from gonorrhoea at other sites (8 women, 6 heterosexual, and 2 homosexual men). Five of the women, two of the heterosexual men, and one of the homosexual men had exposed themselves to both pharyngeal infection and genital or rectal infection, by sexual activities with an infected partner; nonetheless, they had contracted only a pharyngeal infection.

Two men had only engaged in cunnilingus with their infected partners.

A man and a woman were believed to have had a persisting pharyngeal infection which had not been diagnosed when they had been treated for genital gonorrhoea some months previously.

A man attended for examination for tonsillar gonorrhoea as he had practised cunnilingus 6 months earlier.

Two women denied oro-genital contact with the supposed source of infection, but admitted this practice on previous occasions.

A homosexual man had only kissed his friend, who also had a pharyngeal infection.

Clinical features of pharyngeal gonorrhoea

Table V outlines the presenting signs and symptoms in the 110 patients with pharyngeal gonococcal

infections. The condition was asymptomatic in 87 cases (79 per cent.), while seventeen patients (15 per cent.) complained of a sore throat and had varying degrees of redness and enlargement of the tonsils, occasionally with exudates. In the latter redness of the pharyngeal mucosa was also frequently observed. There were no general symptoms in these cases.

Five women and one man (5 per cent.) had an acute febrile tonsillitis, in one case accompanied by migratory arthralgia.

Table VI shows the clinical findings in 51 patients with a *persisting* pharyngeal infection after the initial treatment.

The condition remained asymptomatic in 29 patients, and became asymptomatic in six in whom symptoms had been present at the first visit. Ten patients had slight to moderate signs and symptoms of tonsillar or pharyngeal infection; in five of them these had developed during the follow-up period. In six patients an acute febrile tonsillitis occurred; only one of these had had milder symptoms before the febrile tonsillitis appeared.

Febrile tonsillitis thus occurred in twelve patients (11 per cent.).

In nine patients we noted a few or numerous submucosal whitish pin-point granules, scattered over the surface of the tonsils without relation to the crypts.

Remote complications were observed in four patients at a time when only the tonsils harboured gonococci. Two patients had migratory arthralgias, and two presented with metacarpophalangeal arthritis, accompanied in one by pustular lesions characteristic of gonococcal septicaemia. Gonococci, how-

TABLE V *Symptomatology of pharyngeal gonorrhoea at the first visit in 110 patients*

Sex		Female	Male	Total
Signs and symptoms	Absent	45	42	87
	Slight to moderate tonsillitis-pharyngitis	5	12	17
	Febrile tonsillitis	5 (1) ^a	1	6

^aPatient also had migratory arthralgia.

TABLE VI *Clinical findings during follow-up in 51 patients with persisting pharyngeal gonorrhoeae*

Findings		Asymptomatic at first visit		Tonsillitis/pharyngitis at first visit		Total
Sex		Female	Male	Female	Male	
Signs and symptoms	Absent	11	18 (1) ^a	2	4 (1) ^a	35
	Slight to moderate tonsillitis/pharyngitis	3	2		5 (1) ^a	10
	Febrile tonsillitis	4	1	1		6

^aPatients with remote complications.

TABLE VII GCFT in 961 patients with gonorrhoea, in 909 patients without gonorrhoea, and in 93 patients with pharyngeal gonorrhoea

Sex	Female			Male		
	No. performed	Positive		No. performed	Positive	
		No.	Per cent.		No.	Per cent.
No gonorrhoea	289	6	2	620	11	2
Uncomplicated gonorrhoea	378	19	5	583	14	2
Pharyngeal gonorrhoea	50	15	30	43	9	21

ever, could not be demonstrated by culture from the lesions.

Six patients with pharyngeal gonorrhoea had previously had a tonsillectomy.

GCFT

Table VII (above) shows that the GCFT used in this investigation was positive in only 5 per cent. of the women and 2 per cent. of the men suffering from uncomplicated gonorrhoea.

In patients not suffering from gonorrhoea the test was positive in 2 per cent. in both sexes. Only a few of these patients gave a past history of gonorrhoea.

The GCFT was carried out in 93 of the 110 patients with pharyngeal gonorrhoea, and was positive in no less than 30 per cent. of the women and 21 per cent. of the men.

GCFT related to clinical features

Table VIII shows that the positivity of the GCFT is related to the severity of the pharyngeal symptoms. The test was positive in eleven (17 per cent.) of 66 patients without pharyngeal symptoms, in five (31 per cent.) of sixteen with moderate symptoms, and in eight (72 per cent.) of eleven patients with febrile tonsillitis. The seropositivity rate was thus significantly higher in patients with symptoms ($P \leq 0.01$).

Difficulties in demonstrating *Neisseria gonorrhoeae* in the pharynx

For the demonstration of *N. gonorrhoeae* in urogenital sites the culture test was found to be most reliable, a negative finding almost always excluding a

TABLE VIII GCFT related to clinical features of pharyngeal gonococcal infections

Pharyngeal symptoms	GCFT		
	No. performed	Positive	
		No.	Per cent.
None	66	11	17
Moderate	16	5	31
Febrile tonsillitis	11	8	72
Total	93	24	26

gonococcal infection. However, caution must be exercised in the evaluation of a negative culture test from the pharynx. Only in 86 cases were gonococci demonstrated in the pharynx at the initial visit, and in 24 cases gonococci were first detected after preceding negative cultures. In eighteen of the 51 cases in which the treatment failed to cure the pharyngeal infection, we had up to three negative cultures before obtaining a positive one. Re-exposure was denied by all but one of these patients.

Treatment (Table IX)

As the result of the pharyngeal culture for gonococci was not available when treatment of the uro-genital or rectal infection was given, most of the patients with pharyngeal infections were at first given the standard treatment used by the participating clinics.

Thus 38 patients were initially treated with a single oral dose of 1 or 2 g. ampicillin combined with 1 g. probenecid. This treatment had proved to be almost 100 per cent. effective in curing uncompli-

TABLE IX Single-dose treatment in 93 patients with pharyngeal gonococcal infections

Dosage	No. of patients treated	Recurrences of urogenital or rectal infections		Pharyngeal gonorrhoea treatment failures	Not followed
		Re-exposure denied	Re-exposure admitted		
Ampicillin 1 or 2g. + probenecid 1g. orally	38	0	2	21	3
Pivampicillin 1.4g. + probenecid 1g. orally	33	1	2	18	3
Penicillin G 5 m.u. intramuscularly preceded by probenecid 1g. orally	22	0	1	10	2
Total	93	1	5	49	8

cated uro-genital and rectal infections (Bro-Jørgensen and Jensen, 1971c).

Another 33 patients received 1.4 g. pivampicillin with 1 g. probenecid as a single oral dose, while 22 patients were given a single dose of 5 m.u. penicillin G intramuscularly, preceded by probenecid 1 g. orally half an hour earlier.

All these single-dose treatments failed to cure about 60 per cent. of the patients with pharyngeal infections, although the genital and rectal infections were cured in all but six, five of whom were probably re-infected. The high failure rate in pharyngeal gonorrhoea could be related neither to a decreased sensitivity of the pharyngeal strains to the drug used, nor to re-exposure which was flatly denied.

Nine patients were initially given various other treatments, again without an acceptable cure rate.

It became obvious that gonococcal pharyngeal infections required a far more prolonged and intensive treatment than uncomplicated gonococcal infections at the usual sites.

Prolonged treatment with different drugs has been tried for re-treatment of patients with pharyngeal gonorrhoea, namely tetracycline (250 mg. four times daily for 8 days), pivampicillin (350 mg. four times daily for one week), phenoxymethylpenicillin (0.5 m.u. three to four times daily for one week) and sulphamethoxazole-trimethoprim (each tablet containing 400 mg. and 80 mg. respectively, the dosage being 4 tablets immediately, followed by 1 tablet twice daily for one week). All these regimes proved to be inadequate.

However, the best results in treating pharyngeal gonococcal infections were obtained with sulphamethoxazole-trimethoprim tablets in an increased dosage of 2 tablets thrice daily for one week. 29 patients received this treatment (8 initially, the remainder as re-treatment), and all but one, who admitted re-exposure, were cured. Six patients receiving the same drug (2 tablets twice daily for one week) were also cured. However, four patients developed a rash at the end of the treatment and one complained of nausea.

We also found that prolonged treatment with penicillin and ampicillin was apt to cause a rash but the numbers of patients involved were too small to draw any conclusions. Such a rash developed in one out of three patients treated with phenoxymethylpenicillin tablets and also in one out of three patients given pivampicillin orally for one week.

It should be emphasized that, except in one patient who also had a pharyngeal gonococcal infection, no rashes were seen in patients receiving single-dose treatment with penicillin, ampicillin, or pivampicillin.

Discussion

A high incidence of pharyngeal gonococcal infections in women and in both homo- and heterosexual men makes one wonder why this discovery has not been made before. One reason may be that it has been held that *Neisseria gonorrhoeae* is unable to invade stratified squamous epithelium as opposed to the columnar epithelium covering the surfaces generally invaded by the gonococcus.

Also the clinical picture of pharyngeal gonorrhoea does not suggest the presence of gonococci at this site, because the condition is largely asymptomatic. If symptoms are present, they are indistinguishable from those of common infections in this region.

Oro-genital practices, which are the predominant way of contracting a gonococcal pharyngeal infection, were shown to be more widely used by heterosexuals than is generally supposed. The risk of acquiring a gonococcal pharyngeal infection by oro-genital contact with an infected partner was shown to be considerable; 31 per cent. of the women, 14 per cent. of the heterosexual, and 24 per cent. of the homosexual men, who had exposed themselves in this way, contracted a pharyngeal gonococcal infection.

The significance of the type of oro-genital exposure is reflected by the finding of pharyngeal gonorrhoea about twice as often in women and homosexual men who had practised fellatio, taking the receptor role, than in heterosexual men practising cunnilingus.

It is obvious that sexual behaviour varies considerably, depending on taboos related to racial, ethnic, religious, and social factors.

We have dealt with the non-Danish patients separately as they constituted a miscellaneous group, representing more than thirty different nationalities, mostly temporary emigrants ('guest-workers') from South-East Europe, North Africa, the Middle East, and Pakistan. The non-Danish patients were all men. Most of the Muslims denied oro-genital contact, stating that it was forbidden by their religion, and the patients from South-East Europe seemed to be unfamiliar with this form of sexual activity. Accordingly, the incidence of pharyngeal gonorrhoea was considerably lower in this group.

Several patients with pharyngeal gonorrhoea denied oro-genital contact with the alleged source of infection, and some claimed never to have engaged in this practice. Other routes of infection must therefore be considered, especially the possibility of transmitting gonococci from mouth to mouth. In one case at least, transfer seems to have occurred by deep-kissing. The transmission of gonococci by kissing involves unpredictable epidemiological consequences.

The transfer of gonococci from mouth to genitalia also seems to occur. We observed repeated recurrences of gonococcal urethritis in a man who had practised only oro-genital and not genital coitus with his wife, who still harboured gonococci in the tonsils, a genital infection having been cured.

The finding of isolated pharyngeal gonorrhoea in patients who had exposed themselves to both pharyngeal and genital or rectal infection on the same occasion suggests a special affinity of some gonococcal strains for the tonsillo-pharyngeal tissue. A differentiation of the gonococcal strains by their sensitivity to antibiotics showed no specific pattern of the pharyngeal strains.

Clinically, the theory of a tonsillotropism of certain strains might be supported by a frequent occurrence of gonococci in the pharynx of contacts of patients with pharyngeal gonorrhoea. Unfortunately, we did not have the chance to examine a sufficient number of such contacts.

As previously mentioned, signs and symptoms associated with pharyngeal gonococcal infections were indistinguishable from those of common infections in this site. However, the preponderance of positive GCFTs in patients with pronounced pharyngeal symptoms indicates that the gonococcus was in fact the cause of the symptoms.

The tiny submucosal granules that we observed might be suggestive of gonococcal infection, but unfortunately these were seen in only a few cases.

It is to be expected that the remote complications occasionally seen in gonorrhoea would also result from pharyngeal infections, especially as these are often long-standing. In four patients with pharyngeal gonorrhoea, remote complications were observed. The maximum frequency of complications caused by pharyngeal gonorrhoea is not shown by this study, because treatment was started once the diagnosis was established.

Possibly, some, hitherto obscure, clinical pictures (arthralgias, arthritis, mild septicaemia, etc.) may be explained by the presence of a gonococcal focus in the tonsils.

Pharyngeal gonococcal infection is not a transient condition. For various reasons (treatment failure, default, and difficulty of demonstrating the organism at this site), we have seen the pharyngeal infection lasting from more than 1 up to 4 months in sixteen cases.

The difficulty of demonstrating the gonococcus in the pharynx affects the diagnosis as well as the assessment of cure.

The sensitivity of the GCFT used in this study is very low. The test was positive only in a small percentage of patients with uncomplicated gonorrhoea.

In cases of pharyngeal gonorrhoea, however, the test was positive in 26 per cent. Positive results occurred predominantly in patients with severe tonsillitis, suggesting that gonococci invading the tonsillar lymphatic tissue provoke an intense immunological response, while gonococci invading the urogenital or rectal mucosa do not gain access to the lymphatic system to the same extent.

The GCFT has fallen into disrepute because the results are often unreliable. Positive reactions are quite often noted in cases in which routine examinations do not reveal gonococci. Such results have been interpreted as false positive biological reactions or persisting reactions to previous gonorrhoea. The high seropositivity rate in pharyngeal gonorrhoea indicates that some of these so-called false positive reactions may in fact be specific, being caused by gonococcal pharyngeal infections. The evaluation of the GCFT will have to be reconsidered in the light of this finding.

It is felt that interest in the test should be revived, because a positive reaction so obtained may lead to the discovery of a pharyngeal gonococcal infection, by encouraging a persistent search for gonococci in the pharynx.

The treatment of pharyngeal gonococcal infections has proved to be very difficult, the various single-dose treatments of gonorrhoea being unsuccessful in curing pharyngeal infections. This experience is of paramount practical importance, and stresses the necessity of diagnosing the condition.

At present we are unable to recommend any infallible treatment for pharyngeal gonorrhoea. Our trials with prolonged treatment using sulphamethoxazole/trimethoprim for one week were successful, but the high frequency of rashes was a serious drawback. Prolonged treatment with penicillin and ampicillin caused a rash in two out of six patients, suggesting that pharyngeal gonococcal infections predispose to rashes caused by antibiotics and chemotherapeutics.

Conclusions

We consider REPEATED cultures for gonococci from the pharynx as an indispensable procedure in all patients attending for suspected VD for the following reasons:

- (1) A high incidence of gonococcal pharyngeal infections has been found.
- (2) The current treatment schedules for uncomplicated gonorrhoea often fail to cure a concomitant pharyngeal infection.
- (3) A single negative culture from the pharynx does not exclude the existence of a pharyngeal gonococcal infection.

(4) Oro-genital sexual practices are in common use. Unskilled interviewing of patients about these techniques may be embarrassing and the answers obtained will consequently be unreliable.

(5) The clinical picture is not a guide to the diagnosis, because the condition is usually asymptomatic.

Summary

Neisseria gonorrhoeae was cultured from the pharynx in 110 patients attending VD clinics or seen in private practice in Copenhagen. In Danish women, and in heterosexual and homosexual men suffering from gonorrhoea (1,152 patients) the incidence was 10, 7, and 25 per cent. respectively. Isolated pharyngeal gonorrhoea was found in sixteen cases.

The condition was usually asymptomatic, but febrile tonsillitis was noted in twelve patients and remote complications occurred in four.

A relative high positivity-rate of the GCFT was found in cases of pharyngeal gonorrhoea.

Most patients with pharyngeal gonococcal infections admitted oro-genital contact with the alleged source of infection. In a few cases the infection was apparently contracted by kissing. About 80 per cent. of both sexes admitted oro-genital practices, 35 per cent. at their last intercourse (1,203 interviewed). The risk of acquiring pharyngeal gonococcal infection by fellatio and cunnilingus was 31 and 14 per cent. respectively.

The unreliability of a single negative culture from the pharynx is emphasized.

Pharyngeal gonorrhoea proved to be persistent and very recalcitrant to treatment.

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Infections gonococciques du pharynx. Rapport de 110 cas

SOMMAIRE

N. gonorrhoeae fut obtenu par culture du pharynx chez 110 consultants des cliniques vénéréologiques ou en clientèle, à Copenhague. Chez les femmes danoises et chez les hommes hétéro-sexuels et homosexuels atteints de gonococcie (1.152 malades), l'incidence fut respectivement de 10, 7, et 25 pour cent. Une gonococcie isolée du pharynx a été trouvée dans seize cas.

Habituellement, la maladie fut asymptomatique; cependant, chez 12 malades, on nota une angine fébrile et des complications éloignées survinrent quatre fois.

Un taux de positivité relativement élevé pour le test gonococcique de fixation du complément fut trouvé en cas de gonococcie du pharynx.

La plupart des malades atteints d'infection gonococcique du pharynx reconnaissent avoir eu des contacts oro-génitaux avec le sujet considéré comme contaminateur. Dans quelques cas, l'infection fut apparemment contractée lors de baisers. A peu près 80 pour cent des sujets des deux sexes reconnaissent avoir pratiqué le coït oro-génital; 35 pour cent lors de leur dernier rapport (1.203 interrogés). Le risque de contracter une infection gonococcique du pharynx par fellatio et cunnilingus fut respectivement de 31 et de 14 pour cent.

On souligne qu'une seule culture négative est insuffisante pour éliminer le diagnostic.

La gonococcie du pharynx se montra persistante et récalcitrante au traitement.